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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/799,902

03/12/2004

Jae Yeong Park

2080-3236

8316

7590 05/03/2007
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EXAMINER

LE, HOANGANH T

ART UNIT

PAPER NUMBER

2821

MAIL DATE

DELIVERY MODE

05/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/799,902

Applicant(s)

PARK, JAE YEONG

Examiner

HoangAnh T. Le

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


HoangAnh Le
Primary Examiner

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/01/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The amendment filed on March 13, 2007 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 15-20, and 27- 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Araki et al (the US Patent No. 5,400,039, cited by Applicant).

The Araki et al reference teaches in figures 1-3 an antenna system comprising: an antenna 23-25 for receiving a signal, a low noise amplifier 31A for amplifying a signal received through the antenna so as to minimize a noise generation, and a phase shifter 26 for controlling a phase of the amplified signal, wherein the antenna 23-25, the low noise amplifier 31, and the phase shifter 26 are formed on one high resistance substrate 16. The high resistance substrate is preferably selected among a high resistance silicon substrate, a high resistance ceramic substrate, and a printed circuit board (PCB). The high resistance substrate is a substrate of two surfaces having signal electrodes for connecting upper and lower surfaces thereof (figure 1): The antenna is one between a patch antenna and a slot antenna (figure 2A). The phase shifter is constituted with signal electrodes, ground electrodes, inductors respectively formed of the same conductive material, and an electron switch and a capacitor connected to the signal

electrodes (col. 6, lines 29-col. 9, line42). The inductor is formed as a strip line structure or a spiral structure by a micro electro mechanical system (MEMS) technique (figure 2).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7-14 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Araki et al (cited above) in view of Ohata et al (the US Patent No. 6,320,543, cited by Applicant).

The Araki et al reference teaches every feature of the claimed invention, excluding the electron switch being formed as a bare chip form that is connected to the signal electrodes by a bonding wire, the electron switch further includes a polymeric protection material, the electron switch is formed at an etched part of the high resistance substrate after partially etching the high resistance substrate, the electron switch is formed as a bare chip form connected to the signal electrodes by a flip chip bonding technique, the low noise amplifier is formed as a bare chip form connected to the signal electrodes by a bonding wire, the high resistance substrate is a low temperature co-fired ceramic PCB.

The Ohata et al reference teaches in figures 1A-3C 7A and 7B a electron switch being formed as a bare chip form that is connected to the signal electrodes by a

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bonding wire (figure 2A). The electron switch further includes a polymeric protection material (figure 2B). The electron switch is formed at an etched part of the high resistance substrate after partially etching the high resistance substrate. The electron switch is formed as a bare chip form connected to the signal electrodes by a flip chip bonding technique. The low noise amplifier is formed as a bare chip form connected to the signal electrodes by a bonding wire (figure 2). The high resistance substrate is a low temperature co-fired ceramic PCB (col. 4, lines 24-29).

Since one of ordinary skill in the art would recognize the benefit of improving the characteristics of the antenna, it would have been obvious to provide Araki with the electron switch being formed as a bare chip form that is connected to the signal electrodes by a bonding wire, the electron switch further includes a polymeric protection material, the electron switch is formed at an etched part of the high resistance substrate after partially etching the high resistance substrate, the electron switch is formed as a bare chip form connected to the signal electrodes by a flip chip bonding technique, the low noise amplifier is formed as a bare chip form connected to the signal electrodes by a bonding wire, the high resistance substrate is a low temperature co-fired ceramic PCB as taught by Ohata et al.

Response to Arguments

6. Applicant's arguments filed March 13, 2007 have been fully considered but they are not persuasive.

Applicant argues that Araki does not teach one high resistance substrate that is essentially non-conductive. Examiner respectfully disagrees. Araki does teach in figure 1 the substrate 16 including dielectric layers 4,6, and 14. Since the layers 4,6,14 are dielectric layers, the substrate 16 is a high resistance substrate that is essentially non-conductive. Araki also teaches printed circuit elements on the substrate (col. 13, lines 4-6 and 34-40, col. 15, lines 56-60). This means that the substrate 16 is a printed circuit board.

Note, it appears that figures 2a and 2b of the Applicant show the high resistance substance substrate 10 having conductors 30A,50A and figure 2c shows the high resistance substance substrate 10 having conductors 30A,50A and 40.

Since Araki does show all claimed structure, including the high resistance substrate that is essentially non-conductive and the substrate being a printed circuit board, the 102 rejection is proper.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

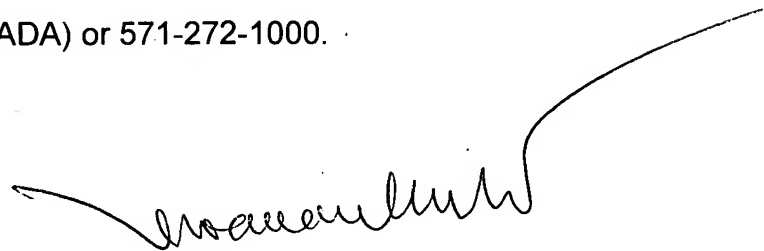
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HoangAnh T. Le whose telephone number is (571) 272-1823. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



HoangAnh Le
Primary Examiner